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Addendum No. 2

.....
FEMA HMGP Phase II Safe Room

Barnwell County School District
Barnwell, SC 29812

Tt Project No. 213-207015-24001
BCSD No.:BCSD-SAFE ROOM 03

Addendum No. 02
to
FEMA HMGP Phase II Safe Room – Contract Documents

October 18, 2024

.....
To: ALL BIDDERS

This ADDENDUM forms a part of the BIDDING AND CONTRACT DOCUMENTS and modifies the following documents:
Original DRAWINGS dated September 11, 2024
Original PROJECT MANUAL dated September 11, 2024

Acknowledge receipt of the ADDENDUM in the space provided on the FORM OF PROPOSAL

This ADDENDUM consists of (04) page and the following:

2.1 GENERAL ADMINISTRATIVE DISCUSSION

- A. Critical Dates:
 - 1. **Bid Due Date: Nov. 07, 2024 2:00pm**
 - 2. Cut off for Substitutions: October 23, 2024
 - 3. Cut off for Questions/Clarifications/or Interpretations: October 29, 2024
 - 4. Last Addendum (for technical content): Nov. 01, 2024
- B. Please direct all requests for information/clarifications to tt-projectadmin@tetrattech.com and Tabi Heath at tabi.heath@tetrattech.com
- C. This project will involve OSF and their approval process. We are attaching the construction section out 2023 South Carolina School Facilities Planning and Construction Guide Effective 2023.09.01. Fact into your construction schedule all the reviews and approvals OSF will require. **See Add #02, Attach #01**

2.2 PROJECT MANUAL MODIFICATIONS:

- A. Section TOC: Add the following sections in both of the TOC and to the body of the spec:
 - 1. ADD the following Specs Sections to the TOC.
 - a. Spec Section 01 31 00 Project Management and Coordination
 - b. Spec Section 01 32 33 Photographic Documentations
- B. Spec Section 01 31 00; Project Management and Coordination, **ADD** in its entirety. **See Attach #03.**
- C. Spec Section 01 32 33; Photographic Documentation, **ADD** in its entirety. **See Attach #04.**

2.3 PROJECT DRAWINGS MODIFICATIONS:

- A. Sheet A-601 Door Schedule, Door Details, and Door Frame: Add the symbol "SS Stainless Steel" to the Door Schedule Abbreviations.
- B. Sheet C-200 Site Plan:
 - 1. Added above ground fire protection tank and pad location. **REPLACE** this drawing with the drawing in "Civil Revised Drawing Att #02."
- C. Sheet C-700 Utility Plan:
 - 1. Adjusted location of sewer connections. Added above ground fire protection tank and pod location. New water line layout to connect to above ground fire protection tank. **REPLACE** this drawing with the drawing in "Civil Revised Drawing Att #02."
- D. Sheet C-701 Sanitary Sewer Profile:
 - 1. Sewer connection inverted adjusted to -4 feet below FFE. Sewer profiles slopes adjusted from the invert changes. **REPLACE** this drawing with the drawing in "Civil Revised Drawing Att #02."
- E. Sheet C-800 Paving, Grading & Drainage plan:
 - 1. Location of YI C-3 moved plan Northwest to avoid new sewer conflict. FEW B-0 Extended into pond further to avoid issues with the crossing water line. **REPLACE** this drawing with the drawing in "Civil Revised Drawing, Att #02."
- F. Sheet C-801 Storm Drainage Profiles:
 - 1. Adjusted inverts, slopes, and length of pipe for Storm Drainage Run C and adjusted length and slope of Storm Drainage Line B. **REPLACE** this drawing with the drawing in "Civil Revised Drawing Att #02."
- G. Sheet FA001 Fire Alarm Legend, Abbreviation and General Notes:
 - 1. Fire Alarm Symbol 30 and 30C change in the description "(Horn/Strobe)" to "(Speaker/Strobe)".

2.4 REQUEST FOR INFORMATION/CLARIFICATIONS (RFI'S):

Question #01: Does the counter door need to be face of the wall mount or integral framed? I've attached counter door brochure where you can see difference between the two options.

Response: **The overhead counter coiling door 104-2 should be mounted to the face of the wall on the concession side.**

Question #02: Does the finish of the door need to be stainless or primed?

Response: **See the 1.3.A. for the information.**

Question #03: Does the door curtain need fenestrations in the slats?

Response: **No**

Question #04: Drawings show mass notification speaker and horn/strobes. Code does not allow horns and speakers to be initiated at the same time. Please confirm symbol legend showing horn strobe is incorrect and this is supposed to be a speaker strobe.

Response: **Symbol legend is incorrect; audible devices will be speaker-based. See 1.3 of this addendum**

Question #05: C-700 calls out an underground storage water tank. A-110 Shows a concrete pad with an above ground tank.

Response: **Civil plans have been updated to reflect an above ground storage tank reference sheet C200 and C700. The primary discipline for design / specifying the tank is the fire protection consultant.**

Question #06: Generally, the certifications of shotcrete contractors are met by incorporating ACI certifications for nozzlemen. Please advise the qualifications of the shotcrete contractors.

Response: **The dome construction will be provided by a specialty contractor. Dome construction is beyond the normal shotcrete qualification testing by ACI. ACI certification is not required.**

Question #07: Please provide a specification for the shotcrete.

Response: **The shotcrete compressive strength is given on the plans. The subcontractor will submit the mix design.**

Question #08: FRP door spec calls for aluminum hurricane-rated frames with FRP doors (door schedule shows 1.75” door thickness). Please confirm aluminum frame size and rating required to accommodate FRP door thickness at these locations

6.	ALL GLASS IN DOORS, HOLLOW METAL FRAMES, AND STOREFRONT FRAMES WILL BE TEMPERED GLASS UNLESS NOTED OTHERWISE IN SCHEDULES.
7.	SEE SPECIFICATIONS SECTION 08 41 13 FOR ALUMINUM DOOR AND FRAME FINISH.
8.	SEE FINISH SCHEDULE ON SHEET A-801 FOR PAINT COLOR SELECTIONS AND ADDITIONAL INFORMATION.
9.	STOREFRONT NOTES SEE A-602
DOOR SCHEDULE COMMENTS	
1.	ALL FRP DOORS AND ALUMINUM FRAME ASSEMBLY AT DOME STEM WALL (EXTERIOR OR AT LOBBY 101 TO MULTIPURPOSE SAFE ROOM) TO BE HURRICANE RATED.
2.	PROVIDE MAGNETIC HOLD OPENS WHERE INDICATED. SEE DOOR HARDWARE SPECIFICATION SECTION 08 71 00
3.	LEFT HAND LEFT ACTIVE, PROVIDE CONCEALED FLUSH BOLTS ON RIGHT HAND LEAF.
4.	ALUMINUM OVERHEAD COILING COUNTER SHUTTER (MANUALLY OPERATED).
5.	CARD READER - SEE SPECIFICATION SECTION 08 71 00 & 08 22 00 DOOR HARDWARE AND ELECTRICAL DRAWINGS.
6.	PROVIDE WIDE ANGLE DOOR PEEP-HOLE VIEWER SEE SPECIFICATION SECTION 08 71 00

Response: **Provide the aluminum frame assembly that is hurricane-rated.**

Question #09: Need a spec on Ticket booth windows and confirm quantities. Glass Legend required.

Response:

Question #10: Please confirm the building lay in ceiling seismic zone requirement. Is it D or C?

8. PRODUCTS AND MATERIALS SHALL BE PLACED, ERECTED, AND INSTALLED IN ACCORDANCE WITH MANUFACTURER RECOMMENDATIONS, MINIMUM CODE REQUIREMENTS, AND CORRECT INDUSTRY ACCEPTED PRACTICES, UNLESS NOTED OTHERWISE IN THESE DRAWINGS.

BASIS FOR DESIGN	
STORM SAFE ROOM	
1. BUILDING CODE:	2021 INTERNATIONAL BUILDING CODE 2021 SOUTH CAROLINA STATE BUILDING CODE ICC-500-2020, HURRICANE SHELTER FEMA P-361
2. ROOF LOAD:	50 PSF LL 15 PSF COLLATERAL PLUS ACTUAL ROOF WEIGHT
3. WIND:	160 MPH BASIC WIND SPEED (V_b) RISK CATEGORY IV, EXPOSURE C $K_d = 1.0, K_e = 1.0$ INTERNAL PRESSURE COEFF = +/- 0.55
4. SEISMIC:	$I_e = 1.25$, RISK CATEGORY IV $S_{DS} = 0.34g, S_{D1} = 0.11g, S_{D2} = 0.34g, S_{D3} = 0.182g$ SITE CLASS D, DESIGN CATEGORY C EQUIVALENT LATERAL FORCE PROCEDURE BASE SHEAR = 0.078W R = 5.0

Response: **It is design category C.**

Question #11: “Doors and Windows” on page 173 are Eligible. Does this mean the ‘Doors’ only, or do they mean *Doors, Frames, and Hardware*? Please advise

Response: **The whole assemble of doors, windows, frames and hardware are in the Eligible category.**

Question #12: “Equipment and Supplies” on page 174 are Eligible and suggests ‘fire extinguishers’ as an example. Would this be both Fire Extinguishers and Fire Extinguisher Cabinets?

Response: **Yes**

Question #13: Are all items that are “Eligible”, are they required to be FEMA P361 Approved products? If that’s the case, all of the interior HM Door x HM Frame Openings would need to be tested assemblies AS WELL AS the FRP Door/Aluminum Frame openings specified as Hurricane rated. Is that correct? (If so, it conflicts with the specs which is for standard Hollow Metal). Or should only the specified FRP

Door/Aluminum Frame openings be FEMA P361/Hurricane rated per FRP specs and Note #1 in the Door Schedule Comments on A-601?

Response: Only the exterior elements this be Hurricane rated.

SUBSTITUTION REQUESTS:

Request #1:

Response:

ATTACHMENTS

1. 2023 South Carolina School Facilities Planning and Construction Guide Effective 2023.09.01
2. Civil Revised Drawing
3. Spec Section 01 31 00, Project Management and Coordination
4. Spec Section 01 32 33, Photographic Documentation

END OF ADDENDUM No. 02

Section 2.5 Construction Phase

- A. Any change order or change directive not limited to time must be submitted to the OSF by the design professional with a code impact statement prior to execution of the change order or change directive. Any changes to documents previously reviewed and approved for permitting purposes must be resubmitted to the approving authority and the status of the resubmittal noted to the OSF. Change orders and change directives having a code impact or a change in permit status require the OSF approval before execution.
- B. Any reply to a contractor's request for information that results in a corrective action, clarification or bulletin drawing not resulting in a change order but having a code impact must be submitted to the OSF prior to giving the contractor notice to proceed. Any changes to documents previously reviewed and approved for permitting purposes must be resubmitted to the approving authority and the status of the resubmittal noted to the OSF. Corrective action, clarification or bulletin drawings having a code impact or a change in permit status require the OSF approval prior to giving the contractor notice to proceed.
- C. **Inspections During Construction:** The design professional must request an inspection by OSF prior to closing rated construction and other concealed areas for inspection of fire and smoke protection measures.
 - 1. Reference material to be available at the site must include:
 - a) Red lined drawings.
 - b) Change directives with supporting documentation.
 - c) Change Orders with supporting documentation.
 - d) RFI's with supporting documentation.
 - e) Bulletin drawings.
 - f) Reviewed submittals and shop drawings.
 - g) Current deficiency log with Chapter 1 and 17 inspection reports.
 - 2. The design professional must verify all work is complete and ready for inspection prior to notifying the OSF.
 - 3. The design professional must provide at least two weeks' prior notice for the inspection. The design professional must submit the Chapter 1 and 17 deficiency logs at least 24 hours prior to the inspection.
 - 4. Phased inspections for a large building can be scheduled. All work must be completed in each section before an inspection is made.

5. The design professional and contractor are required to attend the inspection. The design professional must invite representatives for the district, the contract inspector, and the local fire department to attend the inspection.

D. Substantial Completion: The design professional must request an inspection by OSF when the contractor has reached substantial completion.

1. Reference material to be available at the site must include:
 - a) Red lined drawings.
 - b) Change directives with supporting documentation.
 - c) Change Orders with supporting documentation.
 - d) RFI's with supporting documentation.
 - e) Bulletin drawings.
 - f) Reviewed submittals and shop drawings.
 - g) Current deficiency log with Chapter 1 and 17 inspection reports.
2. The design professional must verify the work is substantially complete and ready for inspection prior to notifying the OSF.
3. The following systems must be complete, and all certification testing completed, prior to notifying the OSF:
 - a) Elevators.
 - b) Potable water.
 - c) Sanitary sewer.
 - d) Septic tank and drain field system.
 - e) Fire Alarm.
 - f) Sprinkler Systems, Above Ground.
 - g) Sprinkler Systems, Below Ground.
 - h) Other fire suppression systems.
4. Inspections by specialty manufacturers for folding bleachers, communication systems, lightning protection systems, and other similar systems should be made before inspection is requested of the OSF and in all cases must be made before occupancy.
5. Inspections by SCDHEC for food service operations and SCDSS for early childhood areas should be made before inspection is requested of the OSF and in all cases must be made before occupancy.

6. The design professional should provide at least two weeks' prior notice for the inspection. The design professional must submit a completed and certified Form F4 at least 24 hours prior to the inspection. The design professional must submit the Chapter 1 and 17 deficiency logs at least 24 hours prior to the inspection.
 7. Phased inspections for large building can be scheduled. All work must be completed in each section before an inspection is made. Inspection of whole building systems such as the fire alarm system must be made after the entire system is complete and tested and ready for inspection.
 8. The design professional, contractor and a representative of the State Fire Marshal's office are required to attend the inspection. Representative(s) for the district, the contract inspector and the local fire department must be invited to attend the inspection.
 9. The OSF will ensure a written record of the inspection and any deficiencies noted will be provided to or by the design professional to the School Facilities Portal. Significant deficiencies may require reinspection for approval.
 10. If multiple occupancy inspections are required due to incomplete work or excessive deficiencies, the OSF reserves the right to charge the design professional, the construction/program manager and/or the contractor for the cost of additional services, including time and mileage costs.
- E. **Certificate of Approval:** Per SC Code §59-23-220, the OSF must issue a written Certificate of Approval before occupancy of a school building is permitted. Before the Certificate can be issued, the following conditions must be met:
1. The design professional has verified the work is substantially complete.
 2. The OSF has inspected the work and concurs with the design professional that the work is substantially complete, and all life safety systems are operating as required by the code. Additionally, all areas of the building and site are free of any apparent life safety hazard and egress is not compromised.
 3. The design professional, district and the OSF have agreed to a date for project closeout.
- F. **Project Closeout:** All outstanding documentation must be submitted to the OSF at project closeout.
1. All required permits and approvals have been received and copies have been transmitted to the OSF.
 2. The design professional has submitted certification that any remaining minor deficiencies not requiring the OSF reinspection are complete.

Addendum #02, Attachment #02

BARNWELL SCHOOL DISTRICT
OWNER
770 HAGOOD AVE
BARNWELL, SC 29812
Tel: 803 541 1300

TETRA TECH
ARCHITECT
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PLUMBING ENGINEER
ELECTRICAL ENGINEER

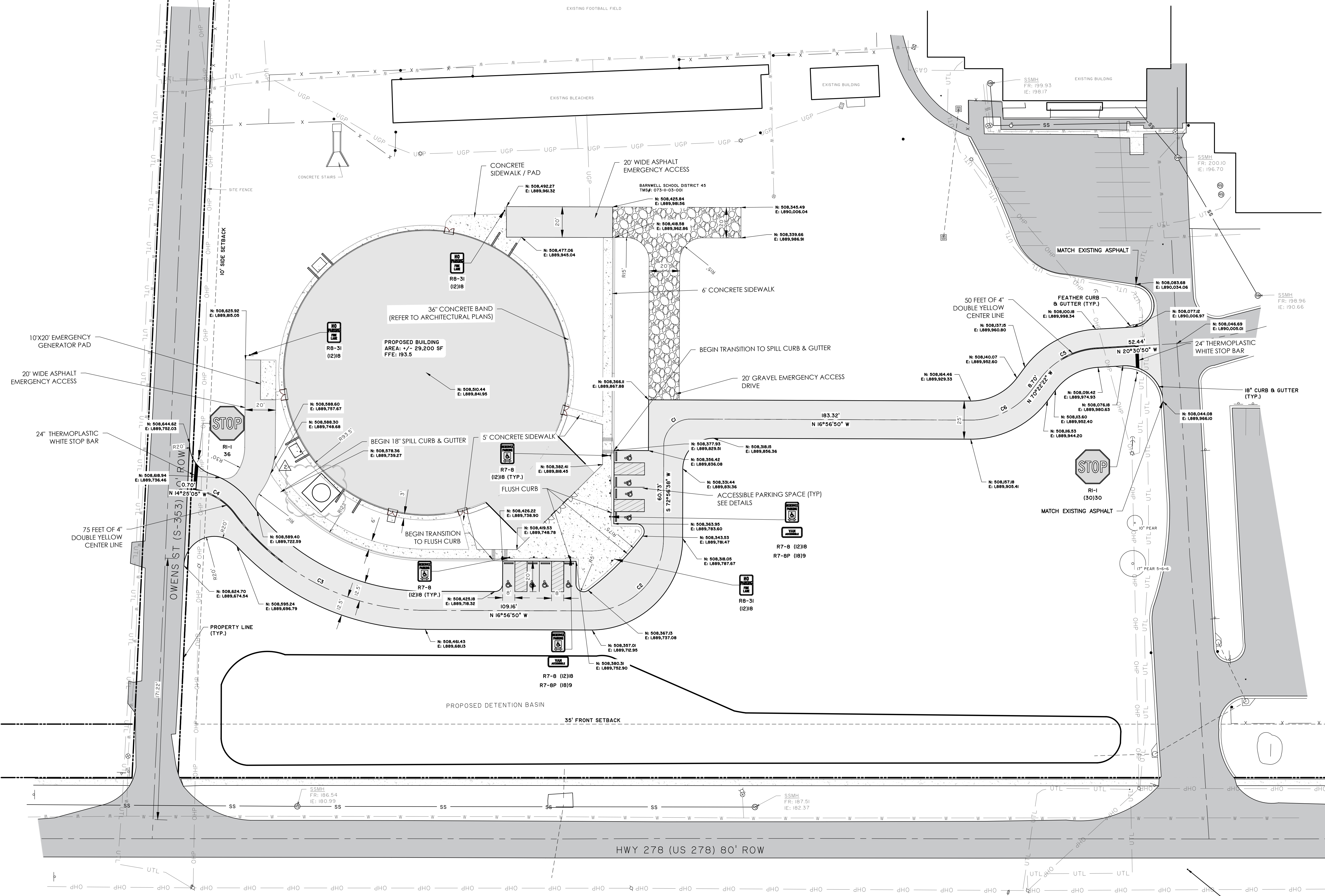
240 CONTINENTAL DR
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302 738 7551

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COLUMBIA, SC 29201
Tel: 803 451 0200

ZZ CONSULTING
STRUCTURAL ENGINEER
640 S. STATE ST
SHELLEY, ID 83274
Tel: 208 357 5404

SITE DATA CHART

PROJECT LIMITS SETBACKS	5.1 ACRES
BUFFER YARDS	MINIMUM FRONT YARD DEPTH: 35'
GYMNASIUM SEATS	MINIMUM SIDE YARD: 10'
ADA SPACES REQUIRED	NONE
ADA SPACES PROVIDED	1204
	8
	8

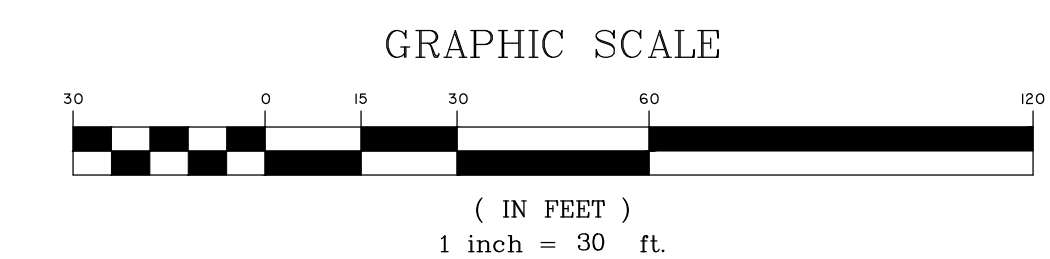


NOTE: SCDOT WILL CORDINATE WITH SCHOOL TO ADD ADDITIONAL TRAFFIC SIGNS OUTSIDE OF PROJECT AREA

CURVE TABLE

CURVE	RADIUS	LENGTH	CHORD	CHD BEARING	DELTA
C1	17.50'	27.52'	24.77'	N 62°00'06" W	90°06'31"
C2	47.51'	73.75'	66.57'	N 62°34'54" W	88°56'19"
C3	155.62'	144.92'	139.74'	N 09°43'52" E	53°21'25"
C4	40.00'	35.48'	34.33'	N 10°59'45" E	50°49'39"
C5	50.00'	43.51'	42.15'	N 45°26'36" W	49°51'33"
C6	50.00'	46.62'	44.95'	N 43°39'36" W	53°25'32"

T&M CONTROL POINT
OPEN TOP PIPE SET
WITH PLASTIC CAP
STAMPED "T&M CONTROL"
N: 507,936.499
E: 1,689,678.223
ELEV.: 190.45 (NAVD89)



MARK	DATE	DESCRIPTION
1	7/20/24	ISSUED FOR CONSTRUCTION

BARNWELL SCHOOL DISTRICT
BARNWELL COUNTY MULTI-USE SAFE ROOM
SITE PLAN - PHASE I

Project No.: 28810.0000
Designed By: MCL
Drawn By: MCL
Checked By: MGD

Addendum #02, Attachment #02



BARNWELL SCHOOL DISTRICT

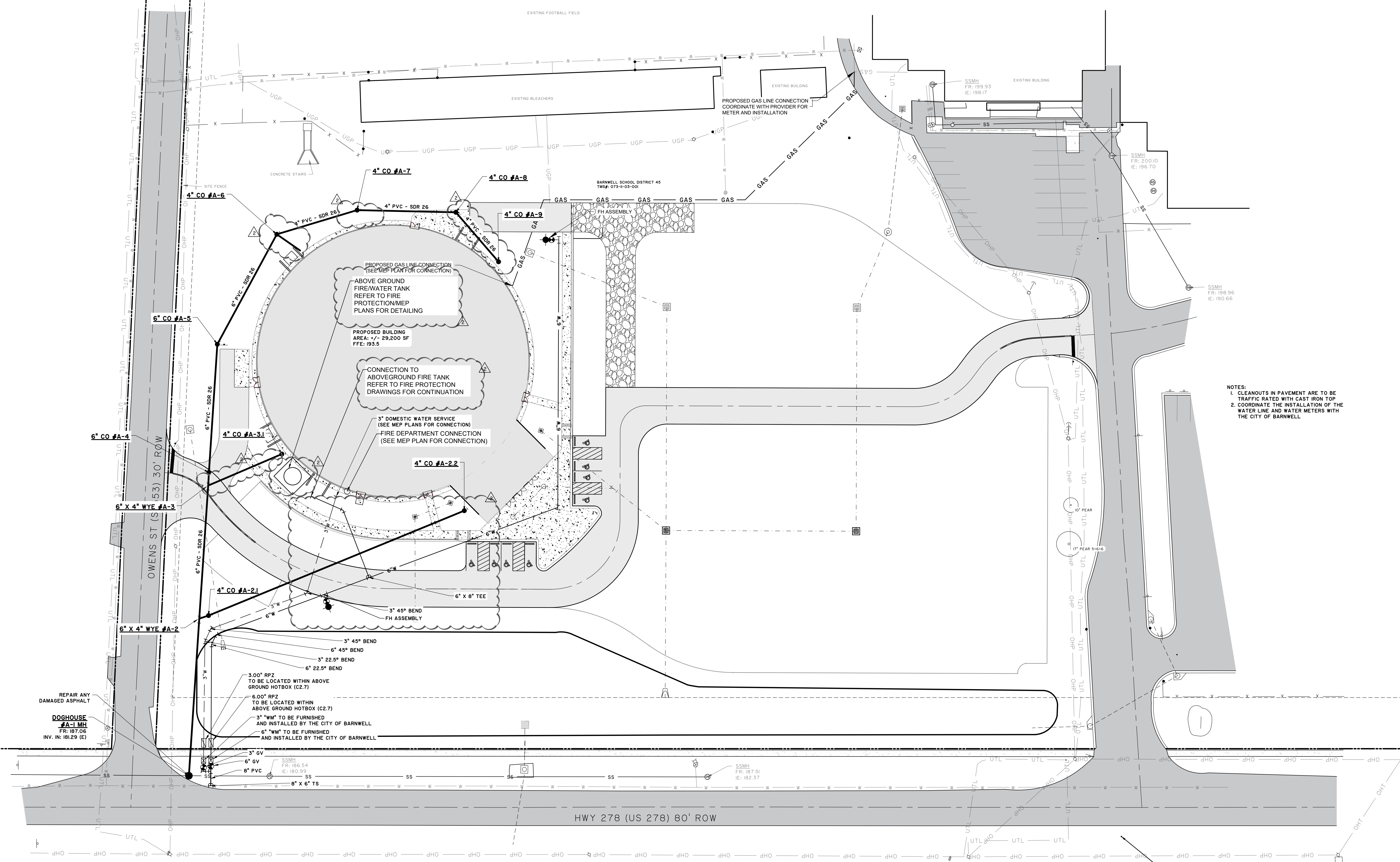
OWNER
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PLUMBING ENGINEER
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NEWARK, DE 19713
302 738 7551

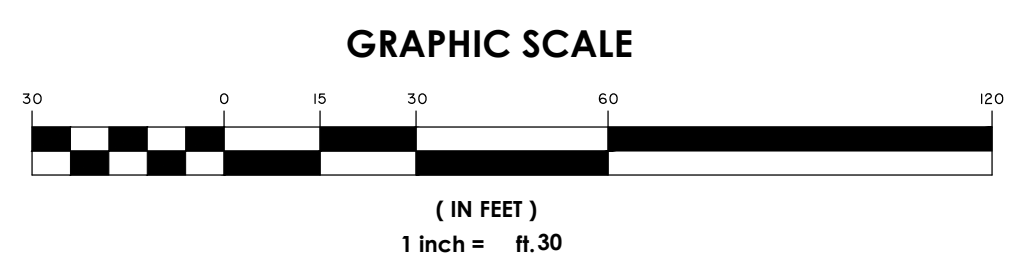
THOMAS & HUTTON
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ZZ CONSULTING
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SHELLEY, ID 83274
Tel: 208 357 5404



- NOTES:
- CLEANOUTS IN PAVEMENT ARE TO BE TRAFFIC RATED WITH CAST IRON TOP.
 - COORDINATE THE INSTALLATION OF THE WATER LINE AND WATER METERS WITH THE CITY OF BARNWELL.

T&H CONTROL POINT
OPEN TOP PIPE SET
WITH PLASTIC CAP
STAMPED "T&H CONTROL"
N: 507,938.499
E: 1,689,678.223
ELEV.: 190.45 (NAVD89)



MARK	DATE	DESCRIPTION
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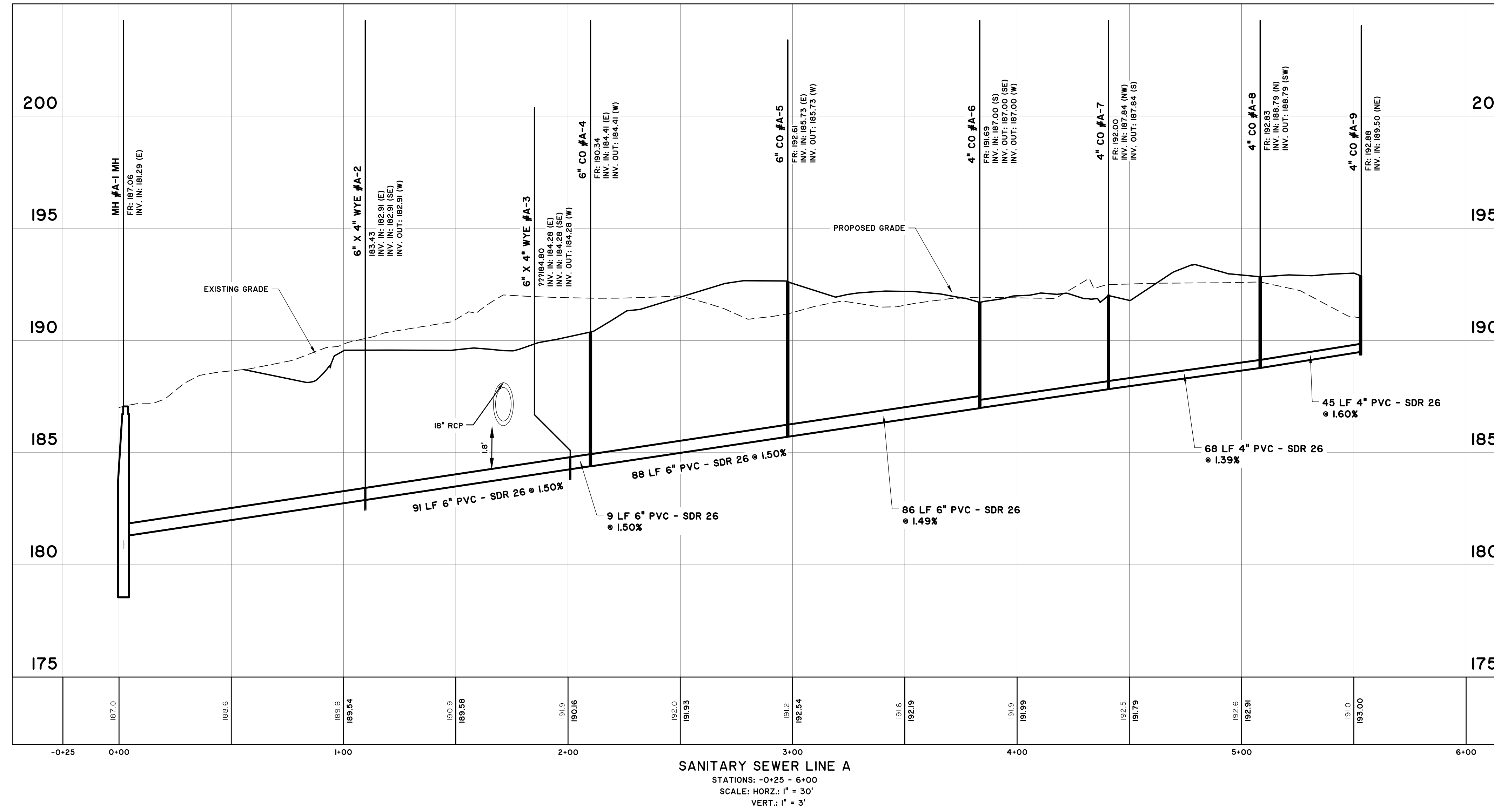
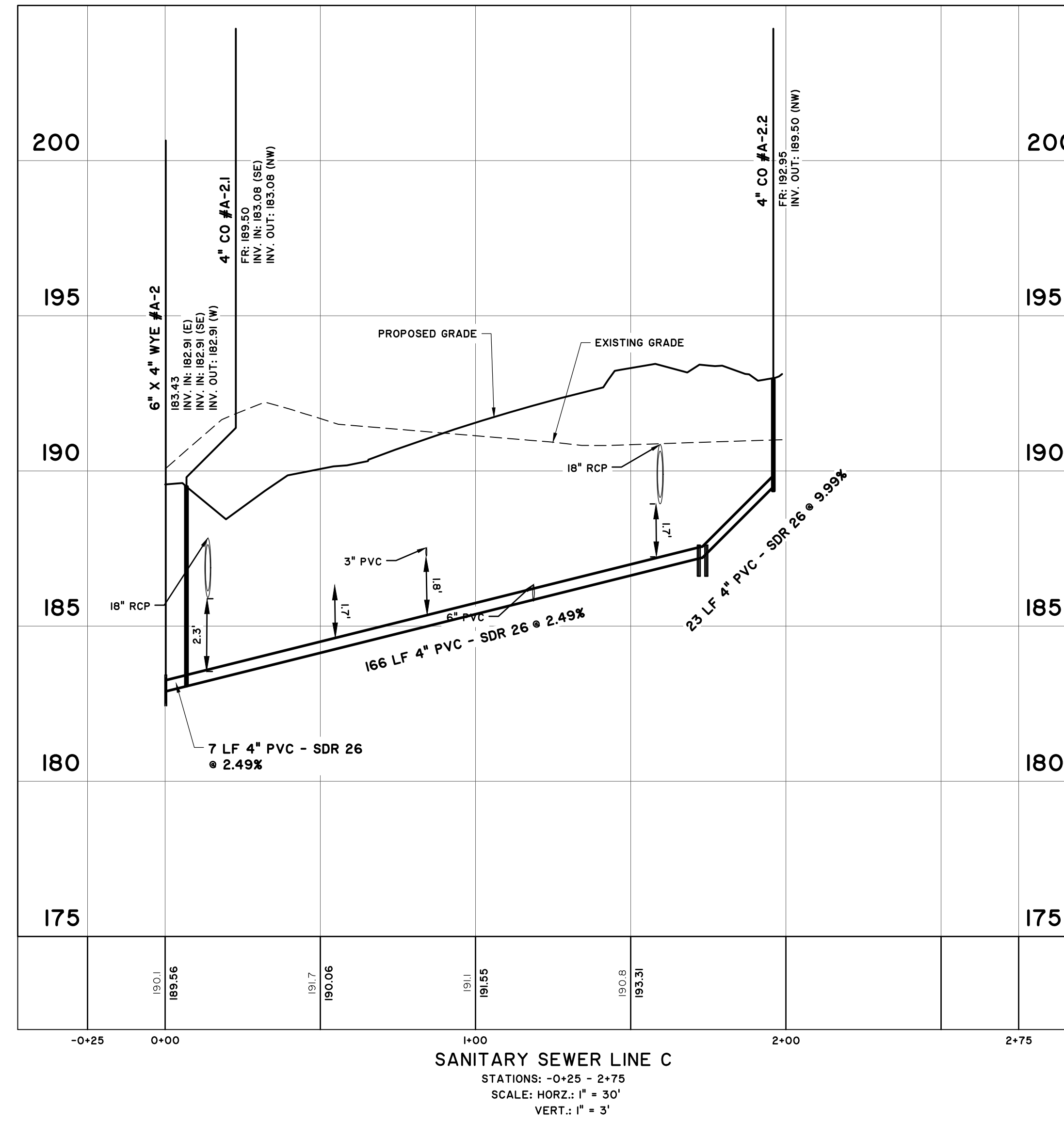
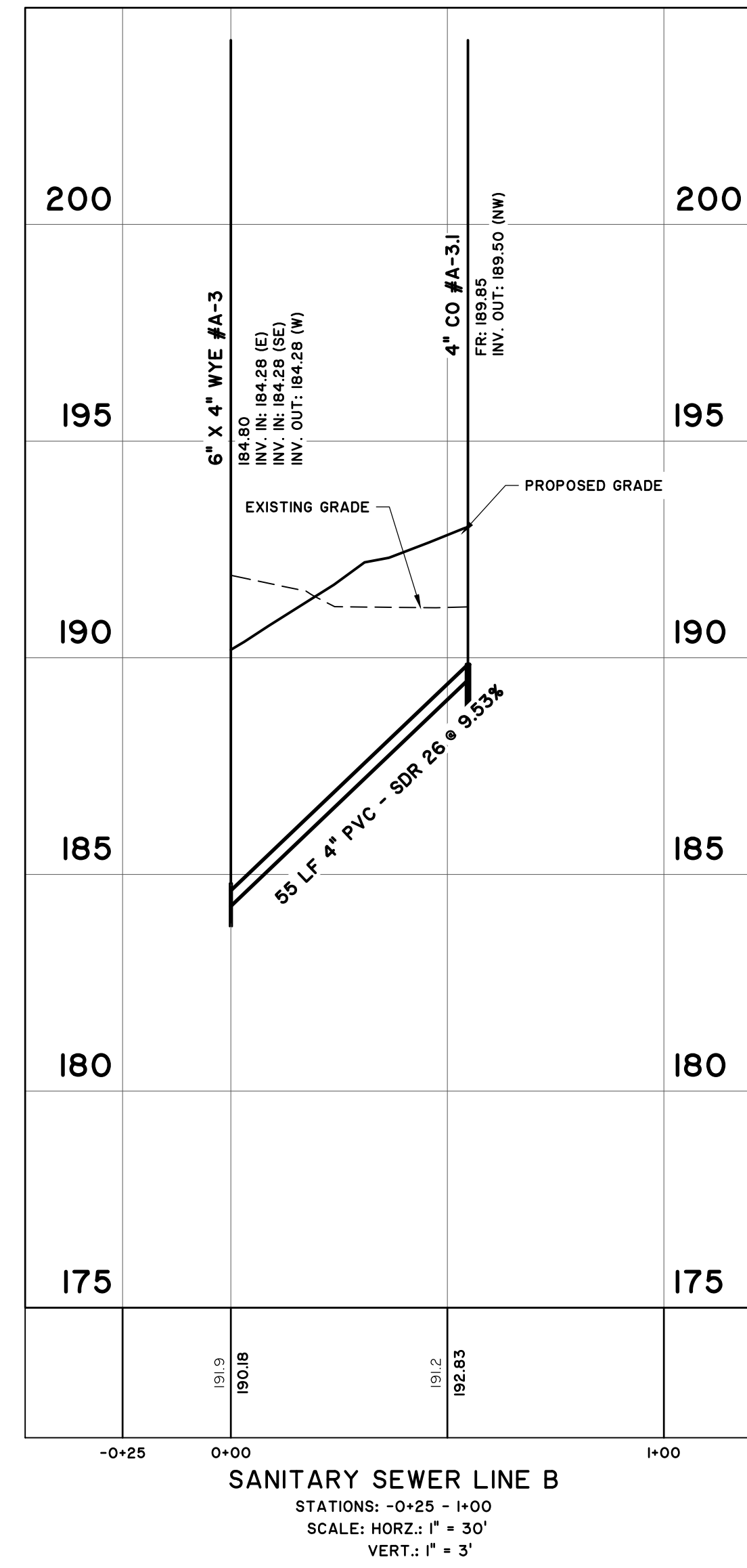
BARNWELL SCHOOL DISTRICT
BARNWELL COUNTY MULTI-USE SAFE ROOM
UTILITY PLAN

Project No.: 28810.0000
Designed By: MCL
Drawn By: MCL
Checked By: MGD

C-700

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Addendum #02, Attachment #02



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 SHELLEY, ID 83274
 Tel: 208 357 5404

MARK	DATE	DESCRIPTION	BY
02	10/12/24	ISSUED FOR CONSTRUCTION	TBL

BARNWELL SCHOOL DISTRICT
 BARNWELL COUNTY MULTI-USE SAFE ROOM
SANITARY SEWER PROFILE

Project No.: 28810.0000
 Designed By: MCL
 Drawn By: MCL
 Checked By: MGD

C-701

Addendum #02, Attachment #02



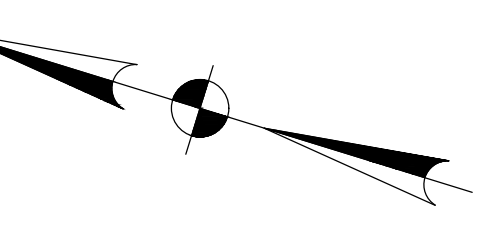
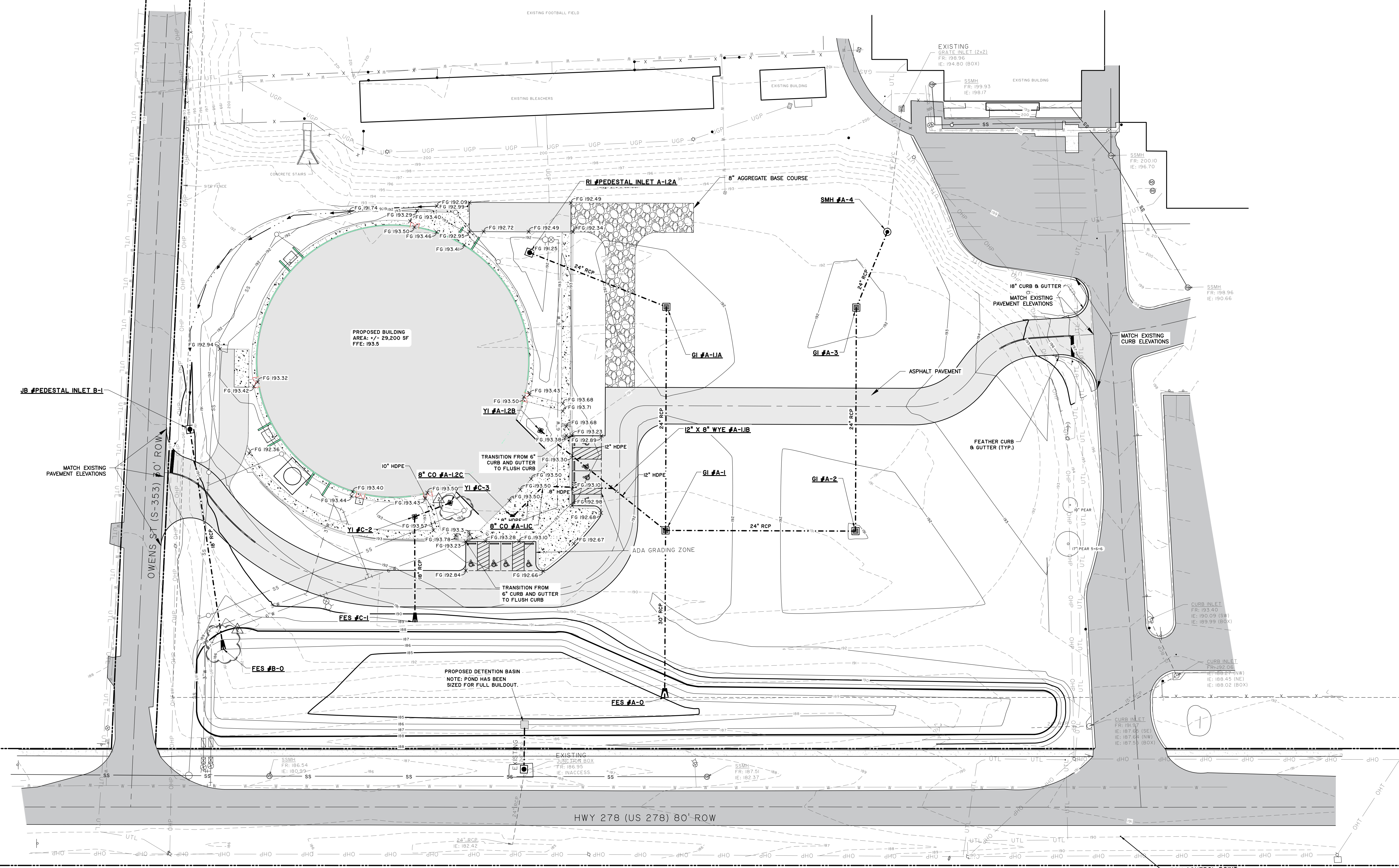
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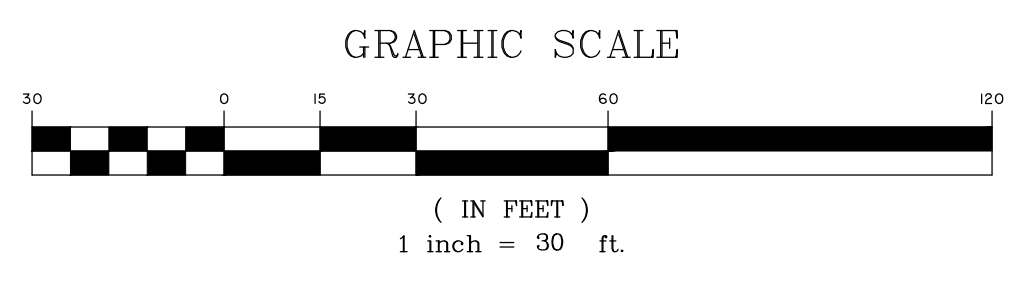
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TBM CONTROL POINT
 OPEN TOP PIPE SET
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 STAMPED "TBM CONTROL"
 N: 507,938.499
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 ELEV.: 190.45 (NAVD89)



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MARK	DATE	DESCRIPTION
01	10/18/21	ISSUED FOR CONSTRUCTION

BARNWELL SCHOOL DISTRICT
 BARNWELL COUNTY MULTI-USE SAFE ROOM
PAVING, GRADING, & DRAINAGE PLAN

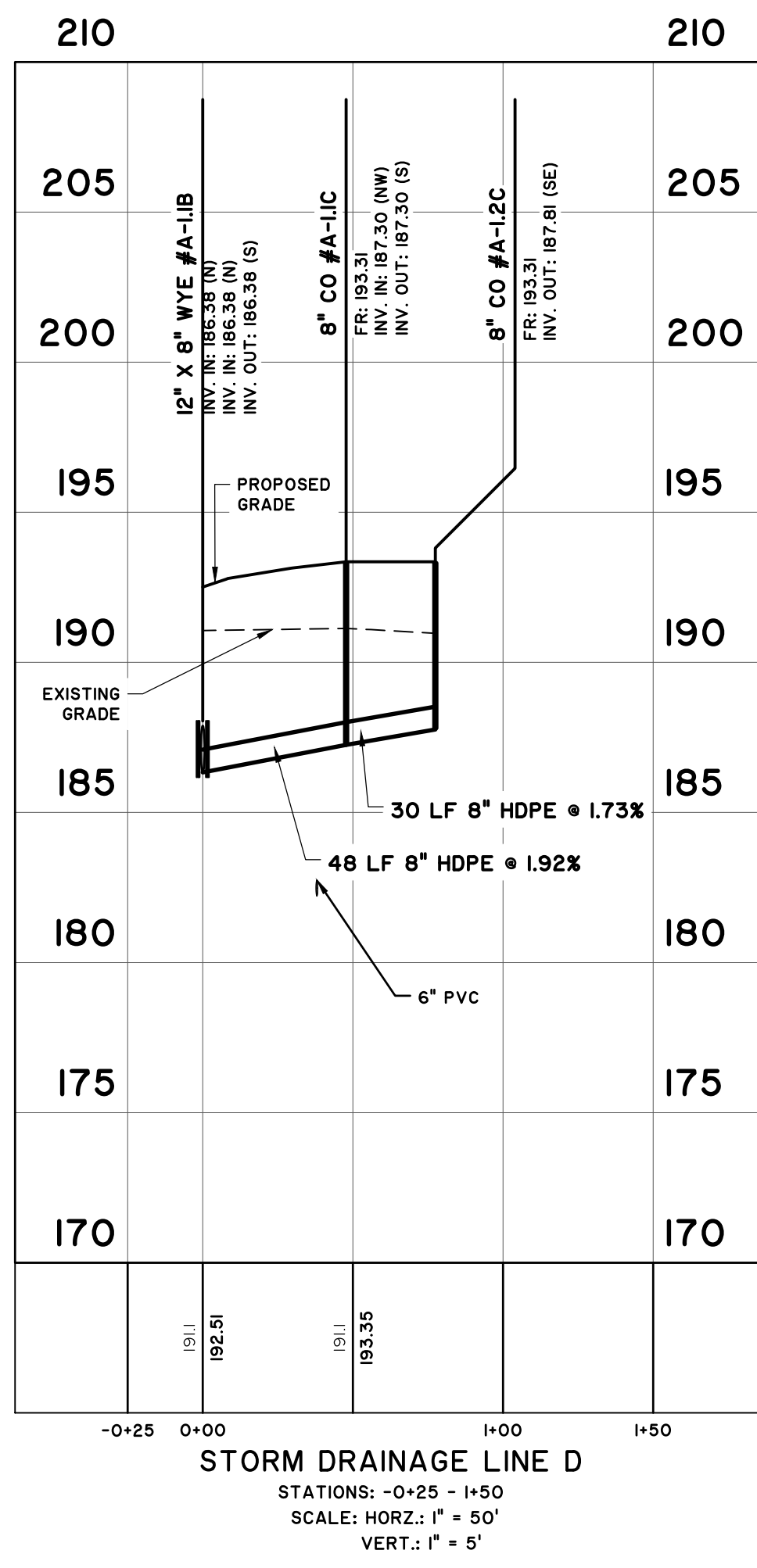
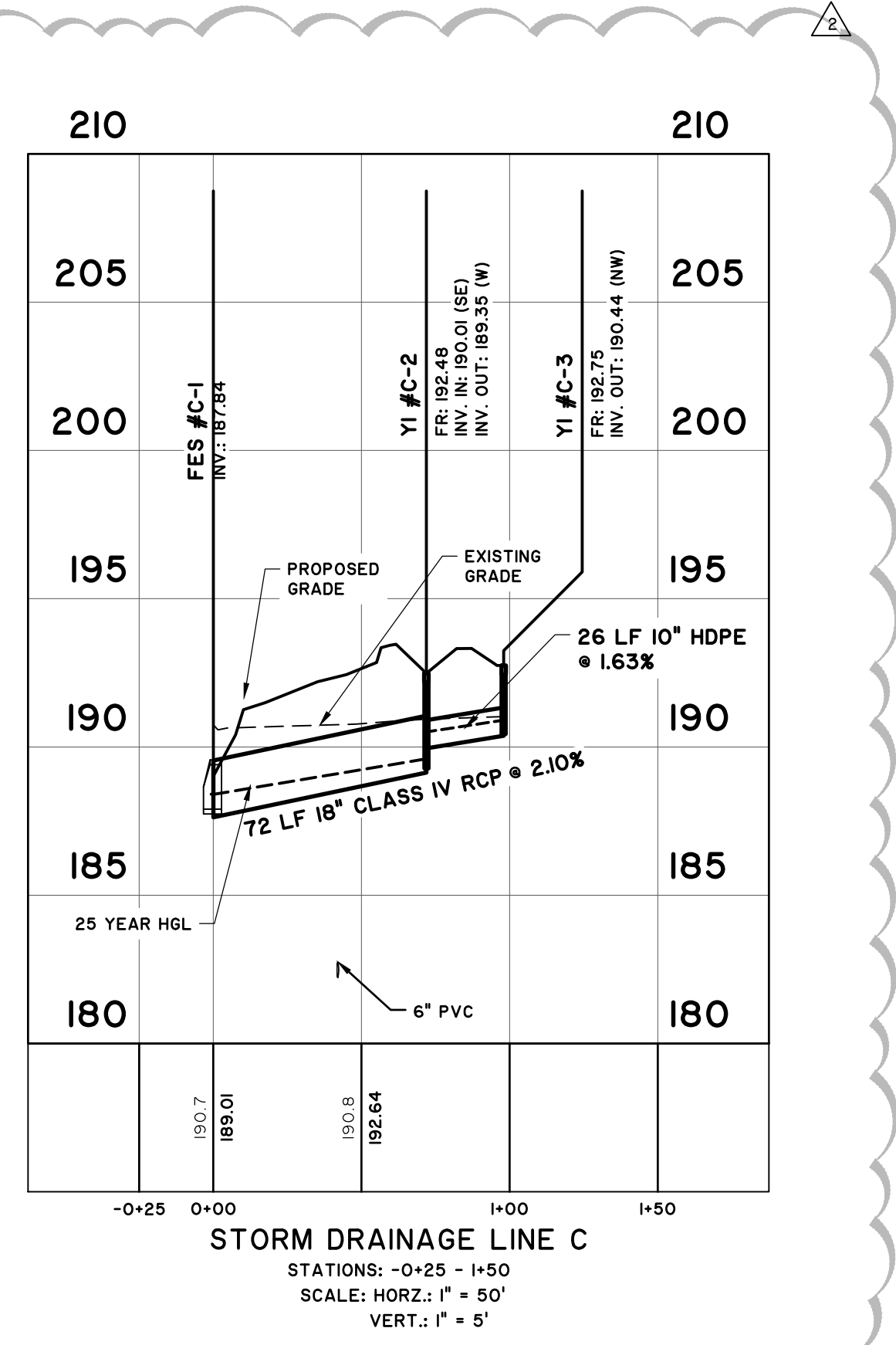
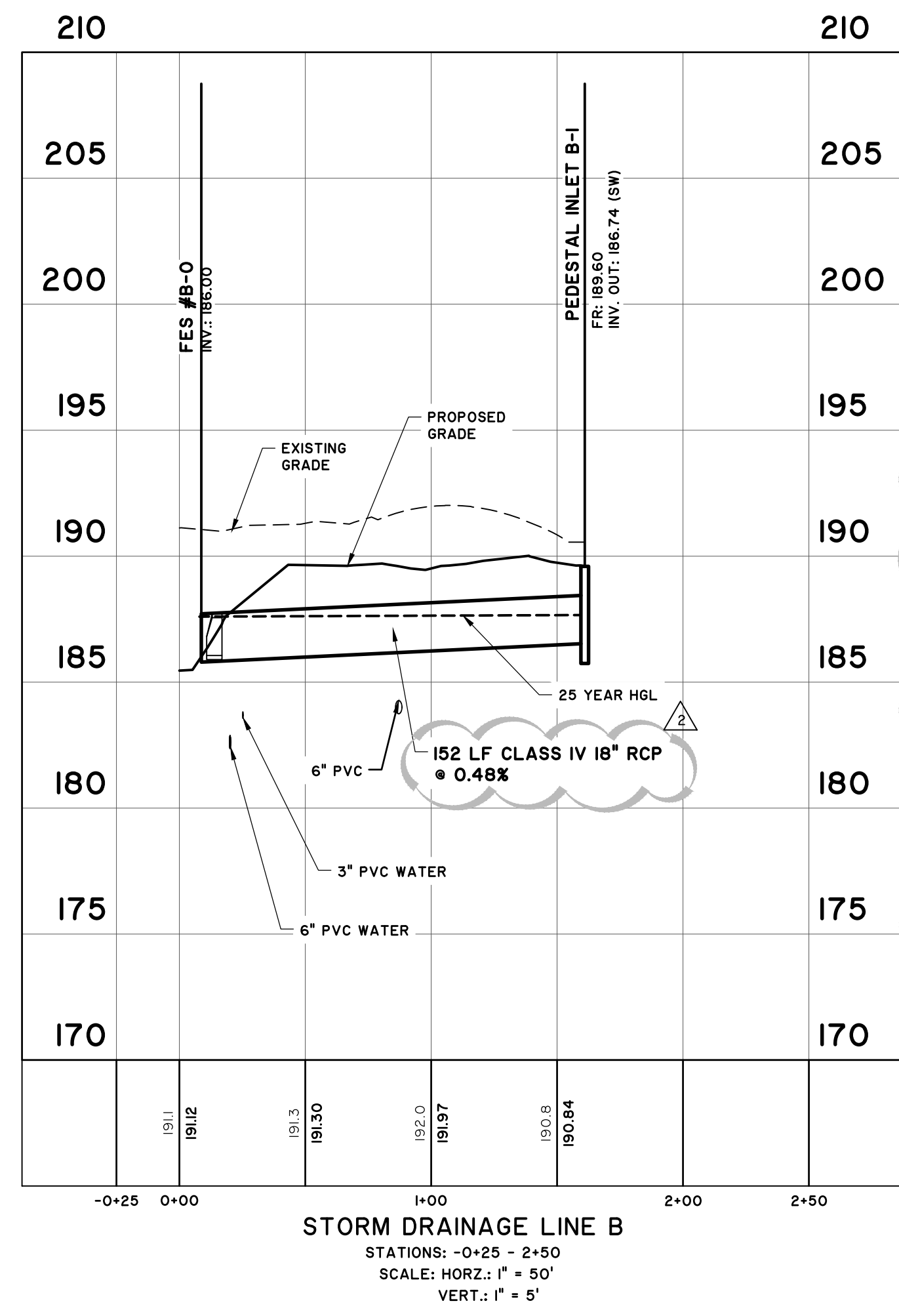
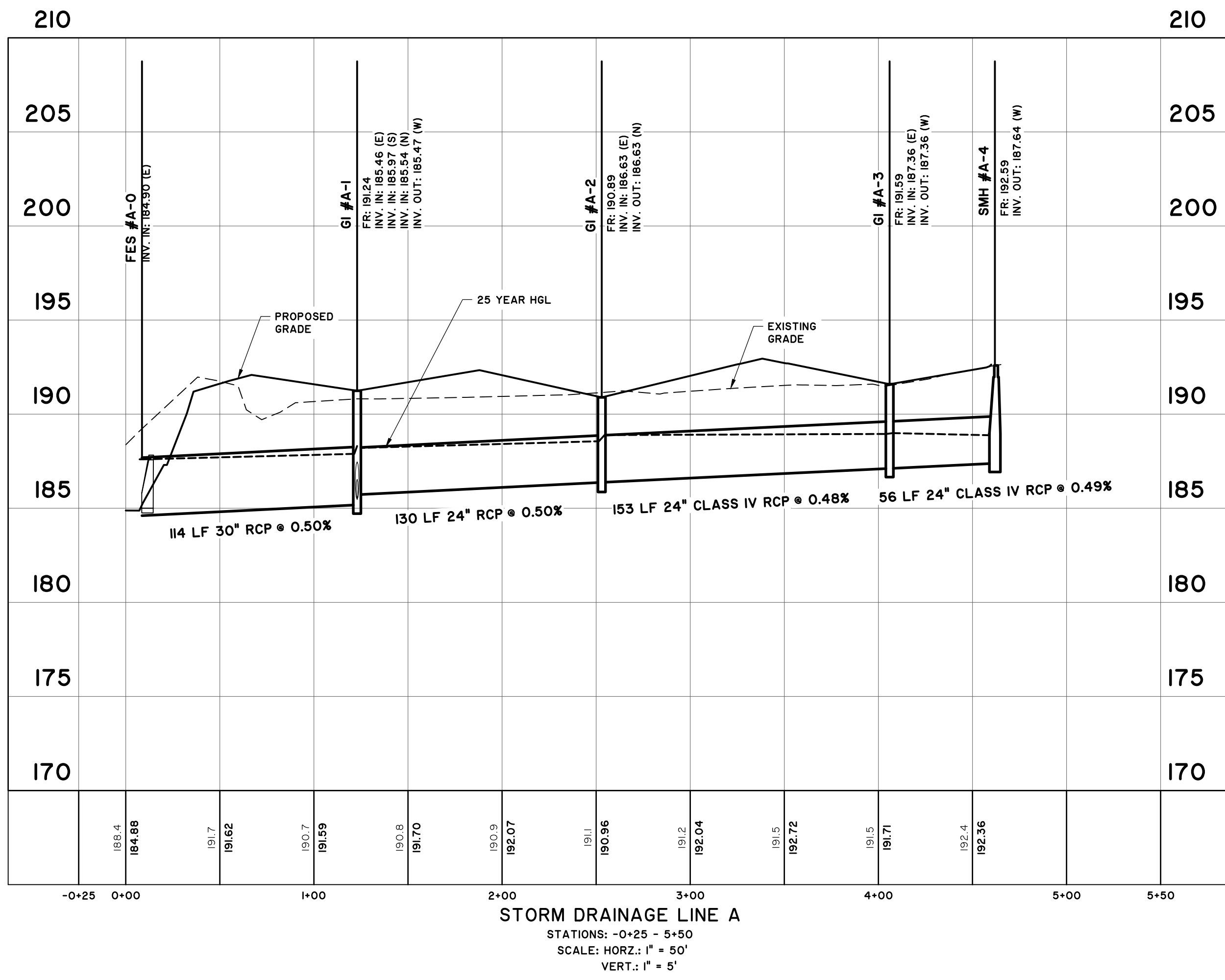
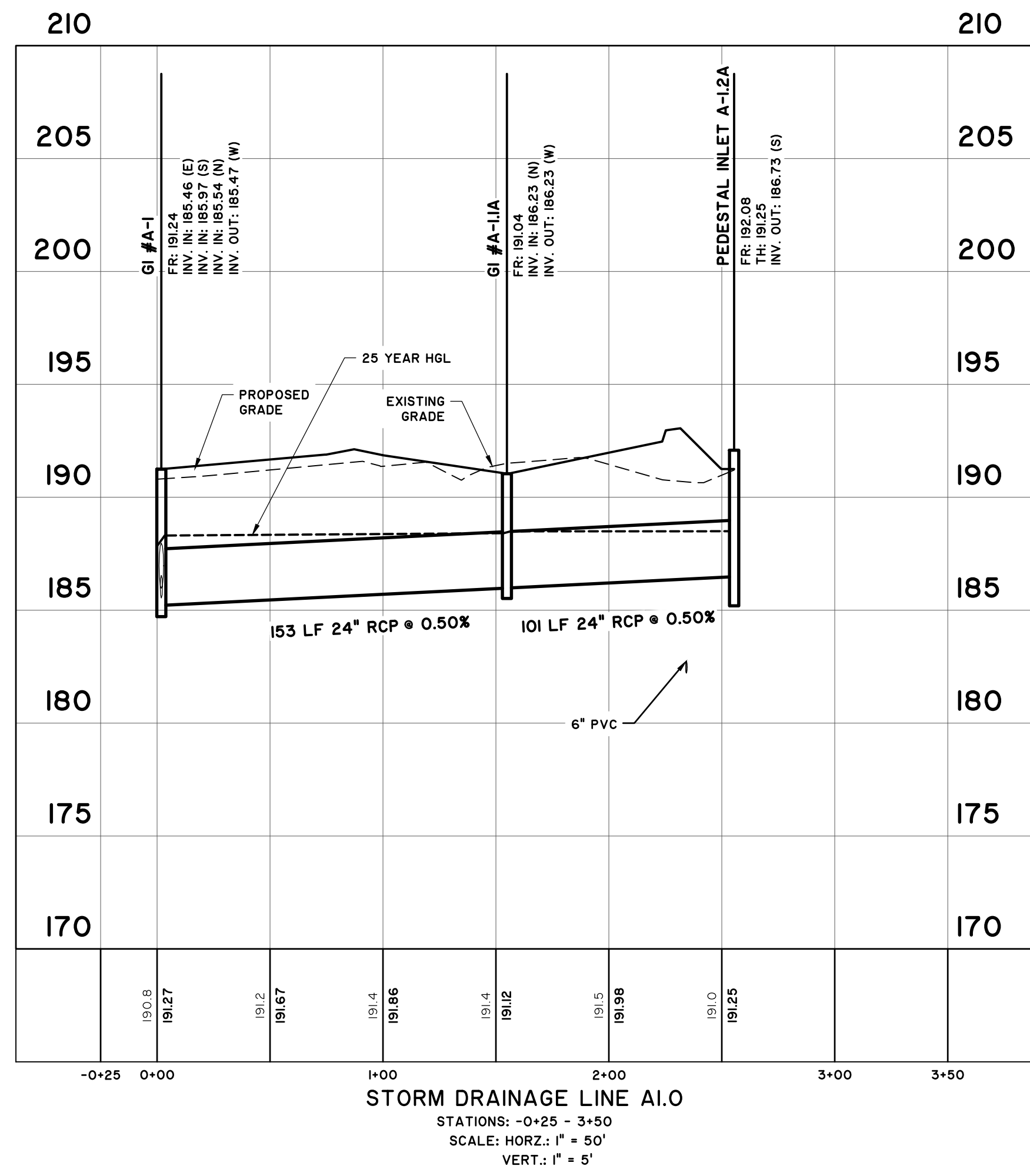
Project No.: 28810.0000
 Designed By: MCL
 Drawn By: MCL
 Checked By: MGD

C-800

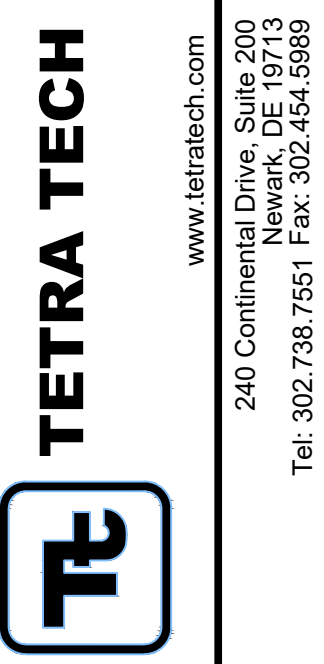
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Addendum #02, Attachment #02

NOTE:
CONTRACTOR TO VERIFY PRIOR TO FIELD INSTALLATION THAT HEADWALLS,
FLARED AND BEVELED END SECTIONS DO NOT PROJECT OUT OF THE FINISHED
SLOPE AND GRADE



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ELECTRICAL ENGINEER

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640 S. STATE ST
SHELLEY, ID 83274
Tel: 208 357 5404

MARK	DATE	DESCRIPTION
12	10/16/21	ISSUED FOR CONSTRUCTION

BARNWELL SCHOOL DISTRICT
BARNWELL COUNTY MULTI-USE SAFE ROOM
STORM DRAINAGE PROFILES

Project No.: 28810.0000
Designed By: MCL
Drawn By: MCL
Checked By: MGD

C-801

Copyright: Tetra Tech

Addendum #02, Attachment #03

SECTION 01 31 00 - PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes administrative provisions for coordinating construction operations on Project, including, but not limited to, the following:
 - 1. General coordination procedures.
 - 2. Coordination drawings.
 - 3. RFIs.
 - 4. Digital project management procedures.
 - 5. Web-based Project management software package.
 - 6. Project meetings.
- B. Each contractor shall participate in coordination requirements. Certain areas of responsibility are assigned to a specific contractor.
- C. Related Requirements:
 - 1. Section 01 32 00 "Construction Progress Documentation" for preparing and submitting Contractor's construction schedule.
 - 2. Section 01 73 00 "Execution" for procedures for coordinating general installation and field-engineering services, including establishment of benchmarks and control points.
 - 3. Section 01 77 00 "Closeout Procedures" for coordinating closeout of the Contract.

1.3 DEFINITIONS

- A. BIM: Building Information Modeling.
- B. RFI: Request for Information. Request from Contractor seeking information required by or clarifications of the Contract Documents.

1.4 INFORMATIONAL SUBMITTALS

- A. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. Include the following information in tabular form:

1. Name, address, telephone number, and email address of entity performing subcontract or supplying products.
2. Number and title of related Specification Section(s) covered by subcontract.
3. Drawing number and detail references, as appropriate, covered by subcontract.

B. Key Personnel Names: Within 15 days of starting construction operations, submit a list of key personnel assignments, including superintendent and other personnel in attendance at Project site. Identify individuals and their duties and responsibilities; list addresses, cellular telephone numbers, and e-mail addresses. Provide names, addresses, and telephone numbers of individuals assigned as alternates in the absence of individuals assigned to Project.

1. Post copies of list in Project meeting room, in temporary field office and in the web-based Project software directory. Keep list current at all times.

1.5 GENERAL COORDINATION PROCEDURES

A. Coordination: Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations included in different Sections that depend on each other for proper installation, connection, and operation.

1. Schedule construction operations in sequence required to obtain the best results, where installation of one part of the Work depends on installation of other components, before or after its own installation.
2. Coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair.
3. Make adequate provisions to accommodate items scheduled for later installation.

B. Prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.

1. Prepare similar memoranda for Owner and separate contractors if coordination of their Work is required.

C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities and scheduled activities of other contractors and direction of Project coordinator to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:

1. Preparation of Contractor's construction schedule.
2. Preparation of the schedule of values.
3. Installation and removal of temporary facilities and controls.
4. Delivery and processing of submittals.
5. Progress meetings.
6. Preinstallation conferences.
7. Project closeout activities.
8. Startup and adjustment of systems.

1.6 COORDINATION DRAWINGS

- A. Coordination Drawings, General: Prepare coordination drawings according to requirements in individual Sections, and additionally where installation is not completely indicated on Shop Drawings, where limited space availability necessitates coordination, or if coordination is required to facilitate integration of products and materials fabricated or installed by more than one entity.
1. Content: Project-specific information, drawn accurately to a scale large enough to indicate and resolve conflicts. Do not base coordination drawings on standard printed data. Include the following information, as applicable:
 - a. Use applicable Drawings as a basis for preparation of coordination drawings. Prepare sections, elevations, and details as needed to describe relationship of various systems and components.
 - b. Coordinate the addition of trade-specific information to coordination drawings by multiple contractors in a sequence that best provides for coordination of the information and resolution of conflicts between installed components before submitting for review.
 - c. Indicate functional and spatial relationships of components of architectural, structural, civil, mechanical, and electrical systems.
 - d. Indicate space requirements for routine maintenance and for anticipated replacement of components during the life of the installation.
 - e. Show location and size of access doors required for access to concealed dampers, valves, and other controls.
 - f. Indicate required installation sequences.
 - g. Indicate dimensions shown on Drawings. Specifically note dimensions that appear to be in conflict with submitted equipment and minimum clearance requirements. Provide alternative sketches to Architect indicating proposed resolution of such conflicts. Minor dimension changes and difficult installations will not be considered changes to the Contract.
- B. Coordination Drawing Organization: Organize coordination drawings as follows:
1. Floor Plans and Reflected Ceiling Plans: Show architectural and structural elements, and mechanical, plumbing, fire-protection, fire-alarm, and electrical Work. Show locations of visible ceiling-mounted devices relative to acoustical ceiling grid. Supplement plan drawings with section drawings where required to adequately represent the Work.
 2. Plenum Space: Indicate subframing for support of ceiling and wall systems, mechanical and electrical equipment, and related Work. Locate components within plenums to accommodate layout of light fixtures and other components indicated on Drawings. Indicate areas of conflict between light fixtures and other components.
 3. Mechanical Rooms: Provide coordination drawings for mechanical rooms, showing plans and elevations of mechanical, plumbing, fire-protection, fire-alarm, and electrical equipment.
 4. Structural Penetrations: Indicate penetrations and openings required for all disciplines.
 5. Slab Edge and Embedded Items: Indicate slab edge locations and sizes and locations of embedded items for metal fabrications, sleeves, anchor bolts, bearing plates, angles, door floor closers, slab depressions for floor finishes, curbs and housekeeping pads, and similar items.
 6. Mechanical and Plumbing Work: Show the following:

- a. Sizes and bottom elevations of ductwork, piping, and conduit runs, including insulation, bracing, flanges, and support systems.
 - b. Dimensions of major components, such as dampers, valves, diffusers, access doors, cleanouts and electrical distribution equipment.
 - c. Fire-rated enclosures around ductwork.
7. Electrical Work: Show the following:
- a. Runs of vertical and horizontal conduit 1-1/4 inches in diameter and larger.
 - b. Light fixture, exit light, emergency battery pack, smoke detector, and other fire-alarm locations.
 - c. Panel board, switchboard, switchgear, transformer, busway, generator, and motor-control center locations.
 - d. Location of pull boxes and junction boxes, dimensioned from column center lines.
8. Fire-Protection System: Show the following:
- a. Locations of standpipes, mains piping, branch lines, pipe drops, and sprinkler heads.
9. Review: Architect will review coordination drawings to confirm that, in general, the Work is being coordinated, but not for the details of the coordination, which are Contractor's responsibility. If Architect determines that coordination drawings are not being prepared in sufficient scope or detail, or are otherwise deficient, Architect will so inform Contractor, who shall make suitable modifications and resubmit.
10. Coordination Drawing Prints: Prepare coordination drawing prints according to requirements in Section 01 33 00 "Submittal Procedures and Requirements."
- C. Coordination Drawing Process: Prepare coordination drawings in the following manner:
1. Schedule submittal and review of Fire Sprinkler, Plumbing, HVAC, and Electrical Shop Drawings to make required changes prior to preparation of coordination drawings.
 2. Commence routing of coordination drawing files with HVAC Installer, who will provide drawing plan files denoting approved ductwork. HVAC Installer will locate ductwork and piping on a single layer, using orange color. Forward drawings to Plumbing Installer.
 3. Plumbing Installer will locate plumbing and equipment on a single layer, using blue color.
 4. Fire Sprinkler Installer will locate piping and equipment, using red color. Fire Sprinkler Installer shall forward drawing files to Electrical Installer.
 5. Electrical Installer will indicate service and feeder conduit runs and equipment in green color. Electrical Installer shall forward drawing files to Communications and Electronic Safety and Security Installer.
 6. Communications and Electronic Safety and Security Installer will indicate cable trays and cabling runs and equipment in purple color. Communications and Electronic Safety and Security Installer shall forward completed drawing files to Contractor.
 7. Contractor shall perform the final coordination review. As each coordination drawing is completed, Contractor will meet with Architect to review and resolve conflicts on the coordination drawings.
- D. Coordination Digital Data Files: Prepare coordination digital data files according to the following requirements:

1. File Preparation Format:
 - a. Same digital data software program, version, and operating system as original Drawings.
2. File Submittal Format: Submit or post coordination drawing files using PDF format.
3. Architect will furnish Contractor one set of digital data files of Drawings for use in preparing coordination digital data files.
 - a. Architect makes no representations as to the accuracy or completeness of digital data files as they relate to Drawings.
 - b. Digital Data Software Program: Drawings are available in DWG format.
 - c. Contractor shall execute a data licensing agreement found in Section 01 33 01 in the form of the "Use and Indemnification Agreement (CAD Release)."

1.7 REQUEST FOR INFORMATION (RFI)

- A. General: Immediately on discovery of the need for additional information, clarification, or interpretation of the Contract Documents, Contractor shall prepare and submit an RFI in the form specified.
 1. Architect will return without response those RFIs submitted to Architect by other entities controlled by Contractor.
 2. Coordinate and submit RFIs in a prompt manner to avoid delays in Contractor's work or work of subcontractors.
- B. Content of the RFI: Include a detailed, legible description of item needing information or interpretation and the following:
 1. Project name.
 2. Owner name.
 3. Owner's Project number.
 4. Name of Architect.
 5. Architect's Project number.
 6. Date.
 7. Name of Contractor.
 8. RFI number, numbered sequentially.
 9. RFI subject.
 10. Specification Section number and title and related paragraphs, as appropriate.
 11. Drawing number and detail references, as appropriate.
 12. Field dimensions and conditions, as appropriate.
 13. Contractor's suggested resolution. If Contractor's suggested resolution impacts the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
 14. Contractor's signature.
 15. Attachments: Include sketches, descriptions, measurements, photos, Product Data, Shop Drawings, coordination drawings, and other information necessary to fully describe items needing interpretation.
 - a. Include dimensions, thicknesses, structural grid references, and details of affected materials, assemblies, and attachments on attached sketches.

- C. RFI Forms: Software-generated form with substantially the same content as indicated above, acceptable to Architect.
1. Attachments shall be electronic files in PDF format.
- D. Architect's Action: Architect will review each RFI, determine action required, and respond. Allow seven days for Architect's response for each RFI. RFIs received by Architect after 1:00 p.m. will be considered as received the following working day.
1. The following Contractor-generated RFIs will be returned without action:
 - a. Requests for approval of submittals.
 - b. Requests for approval of substitutions.
 - c. Requests for approval of Contractor's means and methods.
 - d. Requests for coordination information already indicated in the Contract Documents.
 - e. Requests for adjustments in the Contract Time or the Contract Sum.
 - f. Requests for interpretation of Architect's actions on submittals.
 - g. Incomplete RFIs or inaccurately prepared RFIs.
 2. Architect's action may include a request for additional information, in which case Architect's time for response will date from time of receipt by Architect of additional information.
 3. Architect's action on RFIs that may result in a change to the Contract Time or the Contract Sum may be eligible for Contractor to submit Change Proposal according to Section 01 26 00 "Contract Modification Procedures."
 - a. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Architect in writing within 7 days of receipt of the RFI response.
- E. RFI Log: Prepare, maintain, and submit a tabular log of RFIs organized by the RFI number. Submit log weekly. Use software log that is part of web-based Project management software. Software log with not less than the following:
1. Project name.
 2. Name and address of Contractor.
 3. Name and address of Architect.
 4. RFI number, including RFIs that were returned without action or withdrawn.
 5. RFI description.
 6. Date the RFI was submitted.
 7. Date Architect's response was received.
 8. Identification of related Minor Change in the Work, Construction Change Directive, and Proposal Request, as appropriate.
 9. Identification of related Field Order, Work Change Directive, and Proposal Request, as appropriate.
- F. On receipt of Architect's action, update the RFI log and immediately distribute the RFI response to affected parties. Review response and notify Architect within seven days if Contractor disagrees with response.

1.8 DIGITAL PROJECT MANAGEMENT PROCEDURES

- A. Use of Architect's Digital Data Files: Digital data files of Architect's CAD drawings will be provided by Architect for Contractor's use during construction.
1. Digital data files may be used by Contractor in preparing coordination drawings, Shop Drawings, and Project Record Drawings.
 2. Architect makes no representations as to the accuracy or completeness of digital data files as they relate to Contract Drawings.
 3. Digital Drawing Software Program: Contract Drawings are available in Auto CAD.
 4. Contractor shall execute a data licensing agreement found in Section 01 33 01 in the form of the "Use and Indemnification Agreement (CAD Release)."
 - a. Subcontractors and other parties granted access by Contractor to Architect's digital data files shall execute a data licensing agreement found in Section 01 33 01 in the form of the "Use and Indemnification Agreement (CAD Release)."
 5. The following digital data files will be furnished for each appropriate discipline:
 - a. Floor plans.
 - b. Reflected ceiling plans.
 - c. MEP drawings
- B. Web-Based Project Management Software Package: Provide, administer, and use Contractor's web-based Project management software package for purposes of hosting and managing Project communication and documentation until Final Completion.
1. Web-based Project management software includes, at a minimum, the following features:
 - a. Compilation of Project data, including Contractor, subcontractors, Architect, Architect's consultants, Owner, and other entities involved in Project. Include names of individuals and contact information.
 - b. Access control for each entity for each workflow process, to determine entity's digital rights to create, modify, view, and print documents.
 - c. Document workflow planning, allowing customization of workflow between project entities.
 - d. Creation, logging, tracking, and notification for Project communications required in other Specification Sections, including, but not limited to, RFIs, submittals, Minor Changes in the Work, Construction Change Directives, and Change Orders.
 - e. Track status of each Project communication in real time, and log time and date when responses are provided.
 - f. Procedures for handling PDFs or similar file formats, allowing markups by each entity. Provide security features to lock markups against changes once submitted.
 - g. Processing and tracking of payment applications.
 - h. Processing and tracking of contract modifications.
 - i. Creating and distributing meeting minutes.
 - j. Document management for Drawings, Specifications, and coordination drawings, including revision control.
 - k. Management of construction progress photographs.
 - l. Mobile device compatibility, including smartphones and tablets.

2. Provide up to seven Project management software user licenses for use of Owner, Architect, and Architect's consultants. Provide eight hours of software training at Architect's office for web-based Project software users.
 3. At completion of Project, provide digital archive in format that is readable by common desktop software applications in format acceptable to Architect. Provide data in locked format to prevent further changes.
- C. PDF Document Preparation: Where PDFs are required to be submitted to Architect, prepare as follows:
1. Assemble complete submittal package into a single indexed file, incorporating submittal requirements of a single Specification Section and transmittal form with links enabling navigation to each item.
 2. Name file with submittal number or other unique identifier, including revision identifier.
 3. Certifications: Where digitally submitted certificates and certifications are required, provide a digital signature with digital certificate on where indicated.

1.9 PROJECT MEETINGS

- A. General: Contractor to Schedule and conduct meetings and conferences at Project site unless otherwise indicated.
1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Owner and Architect of scheduled meeting dates and times a minimum of seven days prior to meeting.
 2. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees.
 3. Minutes: Entity responsible for conducting meeting will record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Owner and Architect, within five days of the meeting.
- B. Preconstruction Conference: Architect will schedule and conduct a preconstruction conference before starting construction, at a time convenient to Owner and Architect, but no later than 15 days after execution of the Agreement.
1. Attendees: Authorized representatives of Owner, Architect, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the conference. Participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work. The meeting will be virtual.
 2. Agenda: Discuss items of significance that could affect progress, including the following:
 - a. Responsibilities and personnel assignments.
 - b. Tentative construction schedule.
 - c. Critical work sequencing and long lead items.
 - d. Designation of key personnel and their duties.
 - e. Lines of communications.
 - f. Use of web-based Project software.
 - g. Procedures for processing field decisions and Change Orders.
 - h. Procedures for RFIs.
 - i. Procedures for testing and inspecting.

- j. Procedures for processing Applications for Payment.
 - k. Distribution of the Contract Documents.
 - l. Submittal procedures.
 - m. Preparation of Record Documents.
 - n. Use of the premises and existing building.
 - o. Work restrictions.
 - p. Working hours.
 - q. Owner's occupancy requirements.
 - r. Responsibility for temporary facilities and controls.
 - s. Procedures for moisture control.
 - t. Procedures for disruptions and shutdowns.
 - u. Construction waste management and recycling.
 - v. Parking availability.
 - w. Office, work, and storage areas.
 - x. Equipment deliveries and priorities.
 - y. First aid.
 - z. Security.
 - aa. Progress cleaning.
3. Minutes: Entity responsible for conducting meeting will record and distribute meeting minutes.
- C. Preinstallation Conferences: Conduct a preinstallation conference at Project site before each construction activity when required by other Sections and when required for coordination with other construction.
- 1. Attendees: Installer and representatives of manufacturers and fabricators involved in or affected by the installation and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise Architect, and Owner's Commissioning Authority of scheduled meeting dates.
 - 2. Agenda: Review progress of other construction activities and preparations for the particular activity under consideration, including requirements for the following:
 - a. Contract Documents.
 - b. Options.
 - c. Related RFIs.
 - d. Related Change Orders.
 - e. Purchases.
 - f. Deliveries.
 - g. Submittals.
 - h. Review of mockups.
 - i. Possible conflicts.
 - j. Compatibility requirements.
 - k. Time schedules.
 - l. Weather limitations.
 - m. Manufacturer's written instructions.
 - n. Warranty requirements.
 - o. Compatibility of materials.
 - p. Acceptability of substrates.
 - q. Temporary facilities and controls.
 - r. Space and access limitations.

- s. Regulations of authorities having jurisdiction.
 - t. Testing and inspecting requirements.
 - u. Installation procedures.
 - v. Coordination with other work.
 - w. Required performance results.
 - x. Protection of adjacent work.
 - y. Protection of construction and personnel.
3. Record significant conference discussions, agreements, and disagreements, including required corrective measures and actions.
 4. Reporting: Distribute minutes of the meeting to each party present and to other parties requiring information.
 5. Do not proceed with installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of the Work and reconvene the conference at earliest feasible date.
- D. Progress Meetings: The Contractor is to Conduct progress meetings at biweekly intervals. This meeting will be virtual. On-Site meetings will on a case by case basis.
1. Attendees: In addition to representatives of the Owner and Architect, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.
 2. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
 - a. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's construction schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
 - 1) Review schedule for next period.
 - b. Review present and future needs of each entity present, including the following:
 - 1) Interface requirements.
 - 2) Sequence of operations.
 - 3) Status of submittals.
 - 4) Status of sustainable design documentation.
 - 5) Deliveries.
 - 6) Off-site fabrication.
 - 7) Access.
 - 8) Site use.
 - 9) Temporary facilities and controls.
 - 10) Progress cleaning.
 - 11) Quality and work standards.
 - 12) Status of correction of deficient items.

- 13) Field observations.
 - 14) Status of RFIs.
 - 15) Status of Proposal Requests.
 - 16) Pending changes.
 - 17) Status of Change Orders.
 - 18) Pending claims and disputes.
 - 19) Documentation of information for payment requests.
3. Minutes: Entity responsible for conducting the meeting will record and distribute the meeting minutes to each party present and to parties requiring information.
- a. Schedule Updating: Revise Contractor's construction schedule after each progress meeting, where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

Addendum #02, Attachment #04

SECTION 01 32 33 - PHOTOGRAPHIC DOCUMENTATION

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for the following:
1. Preconstruction photographs.
 2. Concealed Work photographs.
 3. Weekly construction photographs.
 4. Final Completion construction photographs.
 5. Time-lapse sequence construction video recordings.
 6. Construction webcam. Exterior camera at the beginning of the project. An additional camera when Owner and Architect determine it is necessary.
- B. Related Requirements:
1. Section 01 77 00 "Closeout Procedures" for submitting photographic documentation as Project Record Documents at Project closeout.
 2. Section 31 10 00 "Site Clearing" for photographic documentation before site clearing operations commence.

1.2 INFORMATIONAL SUBMITTALS

- A. Key Plan: Submit key plan of Project site and building with notation of vantage points marked for location and direction of each photograph. Indicate elevation or story of construction. Include same information as corresponding photographic documentation.
- B. Digital Photographs: Submit image files within three days of taking photographs.
1. Submit photos by uploading to web-based Project management software site. Include copy of key plan indicating each photograph's location and direction.
 2. Identification: Provide the following information with each image description in file metadata tag in web-based Project management software site:
 - a. Name of Project.
 - b. Name and contact information for photographer.
 - c. Name of Architect.
 - d. Name of Contractor.
 - e. Date photograph was taken.
 - f. Description of location, vantage point, and direction.
 - g. Unique sequential identifier keyed to accompanying key plan.
- C. Time-Lapse Video: Submit time-lapse sequence video recordings within days of recording.
1. Submit time-lapse sequence video recordings at the end of the project by uploading to web-based Project management software site.

2. Identification: For each recording, provide the following information in file metadata tag on web-based Project management software site:
 - a. Name of Project.
 - b. Name and contact information for photographer.
 - c. Name of Architect.
 - d. Name of Contractor.
 - e. Date(s) and time(s) video recording was recorded.
 - f. Description of vantage point, indicating location, direction (by compass point), and elevation or story of construction.

1.3 QUALITY ASSURANCE

- A. Photographer Qualifications: An individual who has been regularly engaged as a professional photographer of construction projects for not less than three years.
- B. Construction Webcam Service Provider: A firm specializing in providing photographic equipment, web-based software, and related services for construction projects, with a record of providing satisfactory services similar to those required for Project.

1.4 FORMATS AND MEDIA

- A. Digital Photographs: Provide color images in JPG format, produced by a digital camera with minimum sensor size of 12 megapixels, and at an image resolution of not less than 3200 by 2400 pixels, and with vibration-reduction technology. Use flash in low light levels or backlit conditions.
- B. Digital Video Recordings: Provide high-resolution, digital video in MPEG format, produced by a digital camera with minimum sensor resolution of 12 megapixels and capable of recording in full high-definition mode with vibration-reduction technology. Provide supplemental lighting in low light levels or backlit conditions.
- C. Digital Images: Submit digital media as originally recorded in the digital camera, without alteration, manipulation, editing, or modifications using image-editing software.
- D. Metadata: Record accurate date and time and GPS location data from camera.
- E. File Names: Name media files with date, Project area and sequential numbering suffix.

1.5 CONSTRUCTION PHOTOGRAPHS

- A. Photographer: Engage a qualified photographer to take construction photographs.
- B. General: Take photographs with maximum depth of field and in focus.
 1. Maintain key plan with each set of construction photographs that identifies each photographic location.

- C. Preconstruction Photographs: Before commencement of the Work, take photographs of Project site and surrounding properties, including existing items to remain during construction, from different vantage points, as directed by Architect.
 - 1. Flag excavation areas and construction limits before taking construction photographs.
 - 2. Take 20 photographs to show existing conditions adjacent to property before starting the Work.
 - 3. Take additional photographs as required to record settlement or cracking of adjacent structures, pavements, and improvements.
- D. Concealed Work Photographs: Before proceeding with installing work that will conceal other work, take photographs sufficient in number, with annotated descriptions, to record nature and location of concealed Work, including, but not limited to, the following:
 - 1. Underground utilities.
 - 2. Underslab services.
 - 3. Piping.
 - 4. Electrical conduit.
 - 5. Waterproofing and weather-resistant barriers.
- E. Periodic Construction Photographs: Take 30 photographs weekly. Select vantage points to show status of construction and progress since last photographs were taken.
- F. Final Completion Construction Photographs: Take 30 photographs after date of Substantial Completion for submission as Project Record Documents. Architect will inform photographer of desired vantage points.

1.6 CONSTRUCTION VIDEO RECORDINGS

- A. Video Recording Photographer: Engage a qualified videographer to record construction video recordings.
- B. Transcript: Provide a typewritten transcript of the narration. Display images and running time captured from video recording opposite the corresponding narration segment.
- C. Time-Lapse Sequence Construction Video Recordings: Record video recording to show status of construction and progress as a final product at the end of the project.
 - 1. Frequency: During each of the following construction phases, set up video recorder to automatically record one frame of video recording every one minutes, from same vantage point each time, to create a time-lapse sequence of the project.
 - a. Commencement of the Work, through completion of subgrade construction.
 - b. Above-grade structural framing.
 - c. Exterior building enclosure.
 - 2. Timer: Provide timer to automatically start and stop video recorder, so recording occurs only during daylight hours.
 - 3. Vantage Points: Following suggestions by Architect and Contractor, photographer to select vantage points.

1.7 CONSTRUCTION WEBCAM

- A. Webcam: Provide two (Exterior & Interior) fixed-location camera(s) with weatherproof housing, mounted to provide unobstructed view of construction site from location approved by Architect, with the following characteristics:
1. Remotely controllable view with mouse-click user navigation for horizontal pan, vertical tilt, and optical zoom of 500 percent minimum.
 2. Capable of producing minimum 12 megapixel images.
 3. Provide pole mount or parapet mount, power supply, active high-speed data connection to service provider's network, and static public IP address for each camera.
- B. Live Streaming Images: Provide web-accessible image of current site image, updated at one-minute intervals when construction is underway.
- C. Web-Based Interface: Provide online interface to allow viewing of each high-definition digital still image captured and stored during construction, from the Internet.
1. Access Control: Provide password-protected access for Project team administered by Contractor, providing current image access and archival image access by date and time, with images downloadable to viewer's device.
 2. Software: Provide responsive software interface for use on computer, tablet, and mobile screens with accompanying iPhone/iPad app and Android apps.
 3. Storage: Maintain images on the website for reference during entire construction period, and for not less than 30 days after Final Completion. Provide sufficient memory on remote server to store all Project images.
 4. Online Interface: Provide website interface with Project and client information and logos, calendar-based navigation interface for selecting images, and pan and zoom capability within high-definition images.
 5. Forward and Reverse: Provide capability to browse through images, moving forward and backward in time by individual image and by day.
 6. Slideshow: Provide capability to automatically display current images from sites when there are three or more cameras used.
 7. Time-Lapse: Provide capability for online display of project time-lapse.
 8. Dashboard: Provide capability to view thumbnails of all cameras on one screen.
 9. Weather: Provide corresponding weather data for each image captured.
 10. Provide public viewer open access to most recent Project camera image.
- D. Maintain cameras and web-based access in good working order, in accordance with web-based construction photographic documentation service provider's written instructions until Final Completion. Provide for service of cameras and related networking devices and software.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION